

COLONY ARRAY-BASED cDNA LIBRARY NORMALIZATION BY  
HYBRIDIZATIONS OF COMPLEX RNA PROBES AND GENE SPECIFIC  
PROBES

**ABSTRACT**

5           Each cell normally has a widely differing number of mRNA transcribed for  
each gene. Consequently, a full-length cDNA library constructed from the mRNA  
would also have a widely differing number of cDNA for each gene. A normalized  
library of the full-length cDNA of a cell is useful for basic, applied, industrial, and  
medical research. This invention provides for a method for constructing a normalized  
10 full-length cDNA library by probing the members of a non-normalized cDNA library  
with a library of probes generated from mRNA in order to identify the cDNA of genes  
that have low or high expression. A collection of the cDNA from the library of the  
genes that have low expression would constitute a normalized library of these genes.  
This invention also provides for a method to reduce the number cDNA of genes that  
15 have high expression represented by probing these cDNA with a library of probes  
generated from a small randomly selected number of these cDNA. cDNA that  
hybridize are represented within this small randomly selected number of cDNA, while  
cDNA that do not hybridize are not represented. The latter cDNA can undergo further  
such probing to further reduce the number of cDNA represented. The cDNA from the  
20 library of the genes that have low expression and the randomly selected highly  
expressed cDNA would constitute a normalized library of these genes.